

Seventeen Mistakes People Make with Permanent Magnets

A couple of months ago, I published a list of 12 mistakes people make with magnets on LinkedIn, see the link below. I asked people to tweak the points or add to the list. My readers came up with five additional mistakes and made some nice adjustments to the topics, generally making them a bit broader.

So I publish the current list below, along with the same request. Please feel free to add to the list or propose adjustments to the mistakes. My goal is to make the list as complete as possible. Over the next few months, I will write a series of articles about them for *Magnetics Business & Technology* magazine, filling in some of the details.

LinkedIn article can be found here:

Use the QR Code or this URL:
<http://bit.ly/1Pjpa2q>



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1. Overlooking thermal properties
2. Failing to saturate fully or correctly
3. Failing to protect from corrosion
4. Failing to optimize the design to use the least amount of material
5. Believing that magnets do not require any special expertise to produce or use
6. Designing a product with a non-existent material
7. Assuming that cost is only from raw materials, or an easy to use \$/kg figure, independent of quantity or complexity
8. Changing the grade without considering the rest of the magnetic circuit
9. Specifying the magnet incorrectly or incompletely
10. Using the wrong adhesive
11. Measuring the wrong parameters
12. Failing to consider recycling in the design stage
13. Assuming that large magnetized parts are easy and safe to handle
14. Failing to consider natural product variations in both magnetic properties and dimensions
15. Assuming that the attractive and repulsive forces are equivalent and can be precisely calculated
16. Ignoring appropriate mechanical considerations: such as using a magnet as a structural part, believing that chips and cracks are not normal for brittle materials, or ignoring the effect of magnetic debris
17. Treating magnets as toys

That's my project for 2016!

About the Author - Dr. Stan Trout has more than 40 years' experience in the permanent magnet and rare earth industries. Dr. Trout has a B.S. in Physics from Lafayette College and a Ph.D. in Metallurgy and Materials Science from the University of Pennsylvania. Stan is a contributing columnist for *Magnetics Business & Technology* magazine. Spontaneous Materials, his consultancy, provides practical solutions in magnetic materials, the rare earths, technical training and technical writing. He can be reached at strout@ieee.org.

